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### Developed using Avecia's research expertise

Avecia has utilised its research expertise to develop a range of near infrared dyes - **Pro-Jet™**.

**Pro-Jet™** dyes are manufactured in industrial quantities and are registered for sale in Europe, USA and Japan. Some of the products which have been designed to meet the needs of a wide range of technologies include:

**Pro-Jet 825LDI**

**Pro-Jet 830NP**

**Pro-Jet 900NP**

Avecia has also developed several water soluble IR dyes, which have absorption profiles between 800 to 900nm.

For further information about these materials, please contact Michel Blanc or Jim Campbell.



## PRO-JET 825LDI

### Product Description

PRO-JET 825LDI is an infrared absorber with an absorption maximum at approx. 800 nm when incorporated into a thin film. It is soluble in ketonic and alcoholic solvents (eg 1-methoxy-2-propanol).

### Applications

- laser energy conversion
- thermal computer to plate

### Provisional Specification

|                               |   |
|-------------------------------|---|
| Description                   | : Green powder                                    |
| $\lambda_{\text{max}}$ (MeOH) | : 774nm   |
| E max                         | : ca. 260,000                                     |
| Melting point                 | : 185°C   |
| Registration Status           | : Registered for sale in Europe,<br>USA and Japan |



## PRO-JET 830NP

### Product Description

PRO-JET 830NP is an infrared absorber with an absorption maximum at approx. 820nm when incorporated into a coating. It is soluble in non-polar solvents such as MEK and is compatible with inks based on such solvents. It can also be formulated with, for example, hydrocarbon based inks.

PRO-JET 830NP imparts a beige hue to a print. Level of visible colour is low and may be disguised if required by the addition to a suitable ink, or by overprinting. It is thermally stable and exhibits good fastness, especially to light.

### Applications

- automatic identification
- brand protection
- laser energy conversion
- thermal computer to plate

### Provisional Specification

|                                      |  |
|--------------------------------------|--|
| Description                          | : Greenish-black powder                    |
| $\lambda_{max}$<br>(dichloromethane) | : 806nm                                    |
| E max                                | : 90,000                                   |
| Melting point                        | : 167 - 168°C                              |
| Decomposition Point                  | : 300°C                                    |
| Registration Status                  | : Registered for sale in<br>Europe and USA |



## PRO-JET 900NP

### Product Description

PRO-JET 900NP is an infrared absorber with an absorption maximum at 860-900nm when incorporated into a print. It has good solubility in non-polar solvents such as MEK or toluene and is compatible with inks based on these solvents. It may also be dispersed in inks based on hydrocarbon solvents.

PRO-JET 900NP imparts a greenish hue to a print. Level of visible colour is low and may be disguised if required by addition to a suitable ink or by overprinting. It is thermally stable and exhibits good fastness, especially to light.

### Applications

- automatic identification
- security
- laser energy conversion

### Provisional Specification

|   |  |
|---|--|
| Description   | : Black powder                                       |
| $\lambda_{\text{max}}$ (CH <sub>2</sub> Cl <sub>2</sub> ) | : 900nm  |
| E max   | : 50,000   |
| Melting point   | : ca 200°C   |
| Decomposition Point                                       | : 250°C  |
| Registration Status                                       | : Fully Registered for sale in Europe, USA and Japan |

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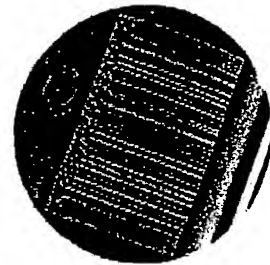
## Infra Red Absorbers

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### From solar control to biomedical applications

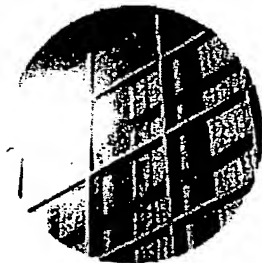
#### Automatic identification

IR absorbing dyes can be used to enhance the brand security of a product. Detection systems are programmed to recognise a specific wavelength absorption profile matched to the IR absorber chosen. This allows robust identification of genuine and counterfeit goods. The high absorption strength and stability of our products means they can be used in low concentrations, having little impact on the colour of the marked area.



#### Solar control

By impregnating glazing materials such as glass, plastics and film coatings it is possible to absorb some of the sun's energy to prevent solar heat gain. This has many applications wherever glazing is required and can significantly reduce natural heat build-up in buildings and motor vehicles.



#### Laser energy conversion

Typical examples are preparation of Optical Data Storage media and direct imaging of lithographic plates for the printing industry. Computer-to-Plate technology is in rapid growth as it offers a quicker, less intensive process that provides excellent image quality.



#### Textiles

Textiles treated with IR absorbers can absorb and dissipate laser energy.



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## Infra Red Absorbers

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### IR Absorber Technology

Avecia is a world leader in the production of near IR absorbers. Avecia's business is focused on the supply of high quality products and is fully supported by a complete technical service.

Avecia's strategy is to address fast-moving technologies through targeted research and development programmes which meet the demanding technical requirements of products in various applications.

